



propwash

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Dedicated to aviation, safety, friendship, community
involvement and education since 1984.

July 2006

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President's Message

The June meeting was well attended and everyone seemed to enjoy it. Richard Pearl gave us a wonderful presentation about his experiences as a glider pilot and instructor. He displayed his Grob 109 powered glider in front of our meeting. As a glider instructor, he awarded me a first glider solo pin, which I shall proudly wear as a tie tack. It was earned by gliding a North American T-28C "heavy glider" dead stick into Lincoln Airport after blowing the engine approximately seven miles west of the airport. My only other glider experience was a dead stick landing in my former family plane, a Cessna 195, with Lorri and our four kids aboard. That also was the result of a destroyed engine. Both were radial engines but both were caused by overhaul assembly errors. I did have one glider lesson in about 1978 at El Mirage but did not solo on that occasion. Glider training would probably benefit all pilots of powered planes.

We will have Jim Doyle of Columbia (California) as our speaker for the July 5th meeting. You will find Jim to be quite entertaining. Jim owns a WW II vintage Navy version Stearman trainer and a Varga Kachina. He is a long time pilot and author. His latest book is a very unique account of his tour of all the bases where his WW II Stearman trainer had worked and interviews with a number of the Air Corps cadets who flew it in their training and then went on to serve in the war. It is like two books in one, very cleverly interwoven between Jim's adventurous tour of the country in the plane about fifty years after the war, and the experiences of the men who trained in it and their combat adventures thereafter.

There will be no August meeting as such. Instead, we will all meet at **THUNDER IN THE SKY 2006** on August 12th and at the dinner dance on the 11th. We are working hard to make it the best show yet. Please contact me if you have not yet been assigned to work as a volunteer.

I'll see you at the July meeting, if not sooner.

Evan Wolfe
AAA President
2005-2006



AAA Youth Auxiliary's 1st Annual Plane Wash



As our Youth Auxiliary is gaining enthusiasm and involvement you will be seeing them around the airport more and more often. Come out and show your support Saturday June 24th between 10am and 2pm as they host their first ever AAAYA Plane Wash out Auburn Airport's wash rack!

The members of the Youth Auxiliary will be out washing aircraft for donations that will go towards multiple things the group will be taking part in including the making of the Auburn Airport's short documentary film, Thunder in the Sky, and more! This is your opportunity to help the kids get started in not only helping the community but also to experience different educational field trips to help increase their interest and excitement in the field of aviation!

So whether you have a Cessna 152 or a King Air...the Youth Auxiliary would be more than happy to give it a good old fashion wash! Come

show you support for our association as well as the future generation of aviators. Come join in the fun!

Auburn's Thunder in the Sky 2006 is just around the corner!

Can you believe that we are already gearing up for our annual air fair?! Auburn Airport's 2006 Thunder in the Sky Air Fair is coming up August 12th. This of course means that the annual Hangar Dinner Dance will be happening the night before on August 11th. We are always looking for donations towards the silent auction, so if you have something you are interested in donating please email Penny and Rich Pearl at pennyrich@aol.com.

There are many other ways to help as well. For instance, cash donations, sponsorship, and aircraft displays are always welcome. If you are interested in taking part in any of these actions, or would like more information, visit the Thunder in the Sky website at <http://www.thunderinthesky.org/> for more information including Air Fair contacts.

So mark your calendar and be ready for another amazing and fun-filled Thunder in the Sky at Auburn Airport! With lots of displays, fly-bys, and entertainment it is sure to be a great time for the entire family! And don't forget the Dinner Dance the night before. It's a great time for everyone with good food, music and as always, fantastic company! We look forward to seeing you there August 11th and 12th!

Auburn Aviation Association Officers 2006

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OLD "INDIAN TRICKS" FOR PILOTS #7

By: Evan A. Wolfe, C.F.I.

Old Indian Trick(s) #7 are some hints for getting a little more performance or mileage for your dollar. It is hard not to notice the price of avgas now that it is well on the wrong side of \$4.00 per gallon. The space available does not permit a comprehensive coverage of the subject at this time. The following hints are general in nature and the applicability to particular aircraft may vary.

A. The first step is to pick a cruising altitude that will be efficient, having in mind the requirements of your particular plane and balancing other factors such as the length of the trip, direction of flight, forecast winds aloft and terrain clearance. As you are climbing to your selected cruise altitude, the sooner you get the plane "on the step", and settled into cruise configuration, the better off you will be. Airplanes, like planing hull boats, like to be "on the step". Being on the step means operating at the least angle of attack required to support the weight of the aircraft. That creates less drag. Try climbing 2-300 feet above your selected altitude and then let the plane slowly descend to the target altitude. Trading the little bit of excess altitude for speed will help the plane accelerate to the best planing speed for your selected power setting and altitude. If you are flying I.F.R. or under approach control scrutiny, you may want to level off at your assigned altitude but leave the climb power set until the plane accelerates to cruise speed, and then reduce to your cruise power.

If you are flying V.F.R., you will usually have a choice of several altitudes. If you are flying with a G.P.S., you have a valuable tool for fine tuning your altitude selection. If my altitude target is 10,500 feet based on winds aloft forecast or just general practice, I will often level off at 6,500 as I reach it, and set up cruise power and make a note of what my ground speed is on the G.P.S. I will then continue my climb to the next V.F.R. altitude for traffic in my direction, which would be 8,500 feet in this case, if my heading was 181 to 360 degrees. I would then set up cruise power again and note the ground speed. If it was better than what I got at 6,500 feet, then I would climb on up to 10,500 feet and see what speed I got there. If it was better than at 8,500 feet, I would stay there. If it was worse, I would slowly descend at cruise power back to 8,500 feet. I have often found that winds aloft forecasts are not very accurate. Also, remember that they are reported in true headings, not magnetic. Local area magnetic deviation is significant. Only airport wind reports are given in

magnetic wind direction, since runway headings are also "magnetic".

One thing that you have to remember is that the higher you go maintaining the same power setting, the more horsepower you will be making and the more fuel you will be burning. For example, a typical complex airplane with a constant speed propeller set for 23 inches of manifold pressure and 2,300 r.p.m. at 2,500 feet will be making significantly less power than it would at the same power setting at 7,500 feet. It is an oversimplification, but the engine is an air pump. The r.p.m. setting determines how many times the cylinder will be evacuated to invite a given volume of air and fuel to enter the cylinders. The manifold pressure measures the air pressure on the intake system pushing the air into the cylinders. After combustion, the expansion of the burned fuel and air, and the force of the rising piston, pushes the burned air and fuel out the exhaust pipe into the atmosphere. The higher the altitude, the less dense the atmosphere (lower pressure) and the easier it is to push the exhaust out the other side of the "pump". Therefore, with the same amount of push going in but less resistance to going out, the more air and fuel will pass through in a given number of r.p.m. cycles. The reason I bring this up is that you have to know that to make that extra power, the more fuel you will burn per hour. It is even more dramatic on supercharged planes that can hold a higher manifold pressure at the higher altitudes. The bonus is that there is also less airframe drag at the higher altitudes so the plane will go a little faster on less fuel. If you are one who tends to keep track of his fuel quantity based on his normal fuel burn rate in gallons per hour times the time in the air, you have to be aware of a 10 to 15% variation in consumption rate depending upon the altitude that you are flying at that given power.

B. Another way to stretch your fuel dollar is correct leaning. That subject is worthy of ten pages of discussion so I won't try to cover it all now. Some people advocate leaning to the lean side of peak e.g.t. (exhaust gas temperature) rather than on the rich side. I have always been uncomfortable with that practice. Most dyno tests indicate that the engines make their peak h.p. at from 50 degrees on the rich side of the peak e.g.t. to peak e.g.t. Theoretically, the most dangerous practice would be to run at peak e.g.t. Excess heat is the enemy of your engine. Fuel is expensive but engines are even more expensive. There is also the safety factor to consider. We want to be kind to our engines so they will take good care of us. Personally, I use more separation, on the rich side, between peak e.g.t. and my actual cruise e.g.t., the closer that I am to maximum power. In other words, if I were cruising at 55% of rated power, I wouldn't be in as much danger of overheating my engines internal components as if I were using 75%

OLD "INDIAN TRICKS" Cont'd.

of rated power, so I could afford to lean maybe 50 degrees rich of the peak at 55% power, where I would only lean to 100 degrees rich of peak at 75% of rated power. The pistons and valves are cooled by the incoming fuel and air. Since these components are usually the first to fail in an overheated engine, I want to give them a little help. Most turbocharged engines have a hard time making it to the T.B.O. ratings because of their increased back pressure and higher cylinder head temps. If I had a turbocharged engine, I would run it richer to help cool it. Reliability and safety are more important than saving that last little bit of fuel. Not only do turbocharged engines need overhauls sooner, they cost more too. These are just my personal preferences. When it is your plane and your wallet, and your fanny strapped to the plane, you can pick your own plan. Our goal should first be safety and secondly, saving money. Overly aggressive leaning may save some fuel money but cost a lot in maintenance and safety. That is not a good way to try to save money.

C. The descent is another good place to save some fuel. Wherever you have the option as to your altitude, it is not efficient to maintain your cruise altitude until you are

near your destination and then to pull the power way back and dive for your destination. Start your descent out at a distance that will get you down to pattern height with a descent of only 200-300 feet per minute. Reduce your power slightly as you come down to maintain your normal indicated cruise speed. Trade that hard earned altitude for some free economy. If you are cruising at 180 kts., that is three miles per minute. If you have 6,000 feet of altitude to give up to reach your destination pattern altitude, at 300 f.p.m. rate of descent, you divide 6,000 feet by 300 f.p.m. and that gives you a full twenty minutes of descent time. Twenty minutes at three miles per minute means that you start your descent 60 miles out. At 120 kts. cruise speed, that example would require a lead time of 40 miles. Most people wait too long to start their descent and either end up descending too fast, or even worse, circling around their destination to burn off the excess altitude. In most light planes, it takes a while to get up to cruise altitude. Take back a bit of that expense by planning an efficient arrival descent profile. Also, a slow descent is easier on your ears.

D. Don't be afraid to promote your plane a little. Tell your friends and prospective passengers that you are planning a trip and you are open to taking them along to share the fun and the fuel bill. Don't be afraid to broach the subject and then later find yourself selling your airplane because you can't afford to fly it. There are a

lot of interesting people out there who would love to ride in your airplane and would not mind paying their share. If your friends don't like it, look for better friends. If it's your family members who won't pay, look for a better paying job, or buy an economical single place airplane, like a Mooney Mite or an RV-3.

E. Another way to save a significant amount of fuel is one that has come to mind as a result of my allowing others to fly my T-28 back from air shows, etc. Get the plane trimmed up and, in the words of Rush Limbaugh, "straighten up and fly right". Making a habit of holding your altitude and heading can save you money and time, in addition to developing good habits that might make the difference between success or failure when encountering difficult conditions such as a I.F.R. Many people flying somewhere drift up and down and right and left along their way to the destination. Holding altitude and heading can be a little demanding at first, but after you develop the discipline to do it right, it becomes like any good habit, easier to do. A good autopilot will save an undisciplined pilot a lot of money by keeping the plane on course and on altitude. Perhaps in a few years, it would even help to pay for itself. Cruise ship operators would not even think of hand steering the ship in the open ocean. 2% of their fuel bills is a lot more than the salary of the captain.

If you are constantly correcting for drifting off of your intended heading and/or altitude, it takes power to make changes in direction, which converts to costing money. The main reason for flying disciplined is to increase your skill levels, but the by-product is that you can save as much as 10% on fuel costs. I have wanted to tell a couple of passengers-pilots that they are costing me money and bugging the heck out of me. A good host wouldn't do that, but I sure have thought it. That was the great thing about the P-51. It had a jump seat but no controls in the back.

F. Don't be in a big hurry. Leave a little earlier and fly at 55% power instead of 75%. On one of my first trips in the T-28 to Willows to get the \$100 hamburgers (now \$200), I was accompanied by a Cassutt formula one racer and an RV-6. Instead of my customary 2000 r.p.m. and 29 inches of manifold pressure, I flew at 1800 r.p.m. and 21 inches to keep their tongues from hanging out trying to keep up. When we got back to Auburn, they took 17 gallons between both of them and I took 43. I was not thrilled by my lack of economy at the time, but when I later made the same flight by myself at normal cruise speed, it took a bit over 50 gallons. The difference between 250 m.p.h. and 200 m.p.h. for the trip is a little over five minutes, each way. I usually waste a lot more than that just standing around talking. The difference at \$4.20 per gallon is nearly \$30. That would have more than paid for the meal.

Look for more "Old Indian Tricks" in future issues of *Propwash!*

Name the Plane

Do you know what this is? If not find out in next month's issue!



(Photo by: wikipedia.org)

Last Month's Answer:



Fairey Gannett

Upcoming Aviation Events

June 24th

Auburn Aviation Association Youth Auxiliary Plane Wash Fundraiser!
Auburn Municipal Airport, Auburn, CA
10am-2pm

June 25th-26th

Ramona Air Show
10am-4:30pm
<http://www.ramonaairshow.com/>

July 15-16th

The Royal International Air Tattoo
<http://www.airtattoo.com/>

July 24th – 30th

EAA AirVenture Oshkosh 2006
Whittman Field, Oshkosh, WI
<http://www.airventure.org/>

Friday August 11th

Thunder In The Sky Hangar Dinner Dance
Auburn Airport, Auburn, CA

Saturday August 12th

Thunder In The Sky 2006
Auburn Airport, Auburn, CA
<http://www.thunderinthesky.org/>

August 19th-20th

Wings Over Wine Country
9:30am – 4pm
Santa Rosa, CA
<http://pacificcoastairmuseum.org/airshow2006/airshow2006.asp>

September 13th – 17th

Reno Air Races
Stead Airport, Reno, NV
<http://www.airrace.org>

September 21st

AOPA ASF Safety Seminar Meeting
Sacramento, CA
Venue and time to be announced on ASF website.
<http://www.aopa.org/asf/>

October 5th – 9th

San Francisco Fleet Week 2006
San Francisco, CA
<http://fleetweek.us/fleetweek>

October 7th

Red Bull Air Races (Race #8)
San Francisco, CA
<http://www.air-races.com/city/2006/usa.htm>

October 30th

AOPA ASF Safety Seminar Meeting
Vacaville, CA
Venue and time to be announced on ASF website.
<http://www.aopa.org/asf/>

November 9th – 11th

AOPA Expo
Palm Springs, CA
<http://www.aopa.org/expo/>

AAA Scholarship Winner Takes the Next Step in His Career!

Good Luck to AAA Scholarship winner and Youth Auxiliary member/officer, Dan Fluke, as he begins his education at the University of North Dakota in July! He will be attending the university to gain a B.S. in Commercial Aviation. From everyone in the AAA, we wish you well and hope that you come back and visit us!

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July Meeting!

July 5th, 2006 at 6pm

July's Guest Speaker: Jim Doyle

Potluck Dinner Information (By Last Name)

A-E & T-Z: Salad/Side Dish

F-L: Dessert

M-S: Main Dish

Please bring enough for your family plus four